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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/677,981	10/01/2003	Janne Rautio	879A.0013.U1(US)	9079
29683	7590	04/08/2005	EXAMINER	
HARRINGTON & SMITH, LLP 4 RESEARCH DRIVE SHELTON, CT 06484-6212			LE, HUYEN D	
			ART UNIT	PAPER NUMBER
			2643	

DATE MAILED: 04/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/677,981	Applicant(s) RAUTIO ET AL.	
	Examiner HUYEN D. LE	Art Unit 2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3 -17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-12 is/are allowed.
- 6) ☒ Claim(s) 1,3,4 and 13-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Allowable Subject Matter

1. The indicated allowability of claims 15-16 is withdrawn.

Objection C.F.R. 1.75

2. Claim 1 is objected for presenting inconsistency.

In claim 5, line 9, "second" should be changed to --first--, and in line 13, "second" should be changed to --first--, and "first" should be changed to --second--(also see figure 4 with the first sub-cavity 110A and the second sub-cavity 110B).

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3-4 and 13-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1, lines 3-4, IP 67 standard of ICN/EN 60529 standard of International Electrotechnical should be deleted since the use of "protocols", protocols and standards change over time, hence, it is inappropriate to have the scope of a claim change with time. Since organizations implementing standards meet regularly and have the authority to modify standards, any connection a claim may have to these standards may vary over time. The other aspect arising from this is enablement. If the standard changes, the disclosure may no longer

Art Unit: 2643

support the limitation. If the scope of the invention sought to be patented cannot be determined from the language of the claims, a second paragraph rejection is appropriate (In re Wiggins, 179 USPQ 421).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 3 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Konishi et al. (U.S. 2004/0037441).

Regarding claims 1 and 17, Konishi teaches an acoustic structure protected against dust and water in a device body (the portable telephone unit) that comprises two interconnected, separate cavities (26, 29). As shown in the drawings, a first cavity (26) is for speaker means (27, 40) and a second cavity (29) is for isolating means as claimed (the diaphragm 30 with different vibration modes for a sound reproduction element). Konishi further shows the first (26) and second (29) cavities are located laterally adjacent in the device body (figures 1, 3, 8 and 19) and interconnected through a first acoustic path (31). Further, Konishi shows an open second acoustic path that leads, from the second cavity (29) of the isolating means (30), out of the device.

Art Unit: 2643

Regarding claim 3, Konishi shows the mechanical dimensions of the first cavity and the second cavity that are independent of each other.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 4 and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Konishi et al. (U.S. 2004/0037441).

Regarding claim 4, Konishi teaches an isolating diaphragm (30) with the first and second sub-cavities as claimed. Konishi does not specifically teach the second cavity (29) that is a cylindrical in form. However, providing a frame or a box for a loudspeaker in a cylindrical form is known in the art.

Therefore, it would have been obvious to one skilled in the art to provide any shape for the cavity (29) of the Konishi device such as a cylindrical shape for an alternate choice.

Regarding claims 13 and 15-16, Konishi teaches an acoustic structure protected against dust and water in a device body (the portable telephone unit) that comprises two interconnected, separate cavities (26, 29). As shown in the drawings, a first cavity (26) is for speaker means (27, 40) and a second cavity (29) is for isolating means as claimed (the diaphragm 30 with different vibration modes for a sound reproduction element).

Konishi further teaches the first cavity (26) that includes a shoulder to divide the first cavity into two parts (the cavity in the front of the diaphragm 27 and the cavity in the back of the diaphragm 27), and a speaker element (27, 40) as claimed.

Konishi does not specifically teach the first cavity having a cylinder shape as claimed. However, Konishi providing a frame or a box for a loudspeaker in a cylindrical form is known in the art.

Therefore, it would have been obvious to one skilled in the art to provide any shape for the cavity (26) of the Konishi device such as a cylindrical shape for an alternate choice.

Konishi does not specifically teach a sealing ring at the shoulder of the cavity (26) as claimed. However, Konishi providing a sealing ring for supporting at the edge of the diaphragm is known in the art.

Therefore, it would have been obvious to one skilled in the art to provide a sealing ring at the shoulder of the cavity (26) of the Konishi device or at the edge of the diaphragm (27) for better supporting the diaphragm to the speaker frame.

Art Unit: 2643

In addition to claims 15-16, Konishi does not specifically teach a damper and sealing plate to support the speaker element as claimed. However, the examiner takes the Office Notice that providing a damper and sealing plate to absorbing the vibration of a speaker is known in the art.

Therefore, it would have been obvious to one skilled in the art to provide a damper and sealing plate to support the speaker element (40) on the device body (51, 52) for better absorbing the vibrations of the speaker and providing improved frequency characteristics.

Regarding claim 14, as broadly claimed, Konishi shows a free air space (between the diaphragm and the frame 26) for sound reproduction between the speaker element (27) and the bottom of the first cavity (since the Applicant does not specifically define the location of the bottom cavity, as broadly claimed, the examiner has considered the bottom of the first cavity as the cavity between the diaphragm 27 and the frame 26), and a first acoustic path (31) as claimed.

Allowable Subject Matter

8. Claims 5-12 are allowed.

Response to Arguments

9. Applicant's arguments filed 12/09/2004 have been fully considered but they are not persuasive.

Responding to the arguments on page 10, first and second paragraphs in the Remarks, the Examiner refers to the Office Action. Konishi does show that the first cavity (26) intended for the speaker means (27) and the second cavity (29) intended for the isolating means (30) are

Art Unit: 2643

located laterally adjacent in the device body (51, 52) as claimed in claim 1. These cavities supporting two diaphragms (27, 30) are interconnected and separate cavities (see the drawings).

Conclusion


10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUYEN D. LE whose telephone number is (571) 272-7502. The examiner can normally be reached on 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, CURTIS KUNTZ can be reached on (571) 272-7499. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



HL
April 3, 2005



HUYEN LE
PRIMARY EXAMINER